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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,447	12/27/2005	Shinro Oyama	2005-2028A	3494

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EXAMINER	
JACOBSON, MICHELE LYNN	
ART UNIT	PAPER NUMBER
1794	
MAIL DATE	DELIVERY MODE
03/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,447	OYAMA, SHINRO	
	Examiner	Art Unit	
	MICHELE JACOBSON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/20/08, 7/28/06, 5/16/06, 12/27/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Oyama et al. U.S. Patent Application Publication No. 2003/0062644 (hereafter referred to as Oyama).

4. Oyama teaches a PTFE film that is less than 20 μm thick, has a tensile strength of greater than 80 N/mm^2, preferably greater than 100 N/mm^2 and has a surface roughness (Ra) of less than 0.05 μm. (Para. 50) The film of the invention is recited to be capable of being thermally fused into a tube by corona discharge treatment to increase adherability along an edge of the film followed by fusing it with the opposite edge. (Para. 77) The film recited by Oyama is useful for a surface film for fixing rolls and fixing belts of the sort commonly used in eletrophotography systems. (Para. 59) Example 6 of Oyama recites an embodiment in which 3 layers of expanded PTFE film

were compressed with heat to yield a product with 0% porosity that was 50 μm thick, therefore comprised of 3 films that were each 16.7 μm thick. (Para. 68) The films produced in all of the examples recited had surface roughness (Ra) values of less than 0.05 μm. (Para. 69)

5. The method for producing the film recited by Oyama comprises the steps of:

   a. Expanding a PTFE film to have porosity of from 10-95%, preferably from 40-90% and a thickness of from 5-500 μm, preferably from 5-200 μm. (Para. 44)

   b. Subjecting the expanded PTFE film to a first compression process at a temperature of below the melting point of PTFE (greater than or equal to 100° C) and a compression force of 0.5-60 N/mm^2 to produce a film with a porosity that is ideally less than 10%. (Para. 45)

   c. The film is then subjected to a second compression process at a temperature 1-100° C above the melting point of PTFE and a compression force between 0.1-100 N/mm^2, preferably 1-30 N/mm^2. (Para. 47) The resulting film has a porosity of less than 1%. (Para. 47)

6. Oyama is silent regarding the tensile elastic moduli and the tensile stresses at 5% elongation.

7. Applicant recites on page 32 of the specification that "The fluorine resin tubular article of the present invention has an excellent tensile strength. Specifically the tensile strength thereof if usually 80 N/mm^2, more preferably 100 N/mm^2 or more in both circumferential and tubular axial directions." The fluorine resin tubular article recited in the claims is described in the specification to be produced by the following method:

a. Expanding a PTFE film to have a porosity of 5-95%, more preferably 40-90% and a thickness of from 3-500 μm, preferably 5-200 μm. (Pg. 18)

b. Subjecting the expanded PTFE film to a first compression process at a temperature of below the melting point of PTFE (less than 100° C the melting temperature of PTFE or more) and a compression force of 0.5-60 N/mm^2 to produce a film with a porosity that is ideally less than 10%. (Pg. 19-20)

c. The film is then subjected to a second compression process at a temperature 1-100° C above the melting point of PTFE and a compression force between 0.01-50 N/mm^2, preferably 0.1-40 N/mm^2. The resulting film has a porosity of less than 1%. (Pg. 20-22)

8. Because the film recited by Oyama is produced by the same method recited in the instant application and displays the same properties of tensile strength with the film of the instant application it is the examiner's opinion that in the embodiment recited by Oyama of a film fused on the ends for a fixing roll would inherently meet the limitations of a fluorine resin tubular article with the properties of tensile elastic moduli and tensile stresses at 5% elongation recited by applicant in claim 1. Although Oyama is silent regarding these specific properties, it is the examiner's opinion that an expanded PTFE film with the exact same porosities and thickness recited by applicant subjected to the exact same compression steps as recited by applicant that exhibits the exact same tensile strength recited by applicant would inherently display the same properties of tensile elastic moduli and tensile stress at 5% elongation as recited by applicant.

9. Oyama specifically recites that the films of the invention can be used in a laminate configuration therefore inherently anticipating the limitations of claims 2 and 3. The limitation of the film being wound 2 or more times is a product by process limitation and would result in a multilayer film of the same structure as one produced by fusing the ends of a laminated film.

10. Oyama specifically recites a surface roughness that meets the limitations set forth in claim 4 and since Oyama recites using corona discharge for adhering the end of the film to the other end the limitation of the surface treatment of an inner surface of the tube for adherability recited in claim 5 is met. Finally, Oyama specifically recites the use of the film for fixing rolls and fixing belts in electrophotography systems which anticipates the limitations set forth in claims 6-9.

11. Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have wrapped the film of excellent tensile strength recited by Oyama around itself 2 or more times in order to produce a film of increased tensile elastic modulus and increased tensile stresses at 5% elongation as recited in claims 1-3. As anyone who has ever doubled up a rubber band would know, the resistance to stretching of polymeric materials increases when the thickness of the layer increases. This reconfiguration of the film disclosed by Oyama would have been obvious to one having ordinary skill in the art in order to produce the invention as claimed in claims 1-4 and 6-9. Additionally, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used adhesive on the

inner surface of the tubular article recited by Oyama in order to adhere it to a fixing roll since the use of adhesives to improve "adherability" is well known.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is (571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michele L. Jacobson
Examiner /M. J./
Art Unit 1794

/Carol Chaney/
Supervisory Patent Examiner, Art Unit 1794